

**NOAA Technical Report:
Categorization of Shoreline Oiling from the
Deepwater Horizon Oil Spill**

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Abstract

The *Deepwater Horizon* (DWH) spill released millions of barrels of oil into the Gulf of Mexico over an 87-day period, from 20 April to 15 July 2010. We build on previous work to construct a comprehensive database of shoreline oiling exposure from the DWH spill by compiling several field and remotely sensed datasets to support shoreline oil exposure quantification and injury assessment. We supplemented the surface and subsurface shoreline oiling data collected by Shoreline Cleanup Assessment Technique (SCAT) ground field surveys during the response with supplementary Rapid Assessment (RA) data collected as part of the cooperative Natural Resources Damage Assessment (NRDA) in Louisiana, data collected by the Rapid Assessment Teams (RAT) in Texas, and remotely sensed on-water floating oil polygons. We also compiled surface and subsurface “operational material removal” data describing the mass of material removed from specific shoreline segments. We compiled all these data sources into an integrated spatial database of shoreline segments with attributes summarizing oiling category and timeline, as well as habitat. We also present new simplified oil exposure classes for both beaches and coastal wetland habitats derived from this database that integrate both intensity of oiling and persistence of oiling on the shoreline over time. We documented oiling along 2,113 km out of 9,545 km of surveyed shoreline, representing an increase of 19% from previously published estimates of oiled shoreline length.

TABLE 1. Oil exposure category definitions for beaches, and coastal wetland habitats.

Exposure Category	Definition – Beaches	Definition – Wetlands / Other Habitats
NOT SURVEYED	Not Surveyed by linear surveys	Not Surveyed by linear surveys
NO OIL OBSERVED	No Oil Observed during linear surveys	No Oil Observed during linear surveys
LIGHTER OILING	Maximum of “Light” or lesser surface or subsurface oiling and persistence of oiling for less than 26 weeks	Maximum of “Light” or lesser surface oiling
HEAVIER OILING	Maximum of “Heavier” or “Moderate” surface or subsurface oiling and persistence of oiling for less than 26 weeks	Maximum of “Heavier” or “Moderate” surface oiling and persistence of such oiling for less than 12 weeks
LIGHTER PERSISTENT OILING	Maximum of “Light” or less surface or subsurface oiling and persistence of oiling for 26 weeks or longer	Not used
HEAVIER / LIGHTER PERSISTENT OILING	Maximum of “Heavier” or “Moderate” and persistence of “Light” or less surface or subsurface oiling for 26 weeks or longer	Not used
HEAVIER PERSISTENT OILING	Maximum of “Heavier” or “Moderate” surface or subsurface oiling and persistence of such oiling for 26 weeks or longer	Maximum of “Heavier” or “Moderate” surface oiling and persistence of such oiling for 12 weeks or longer

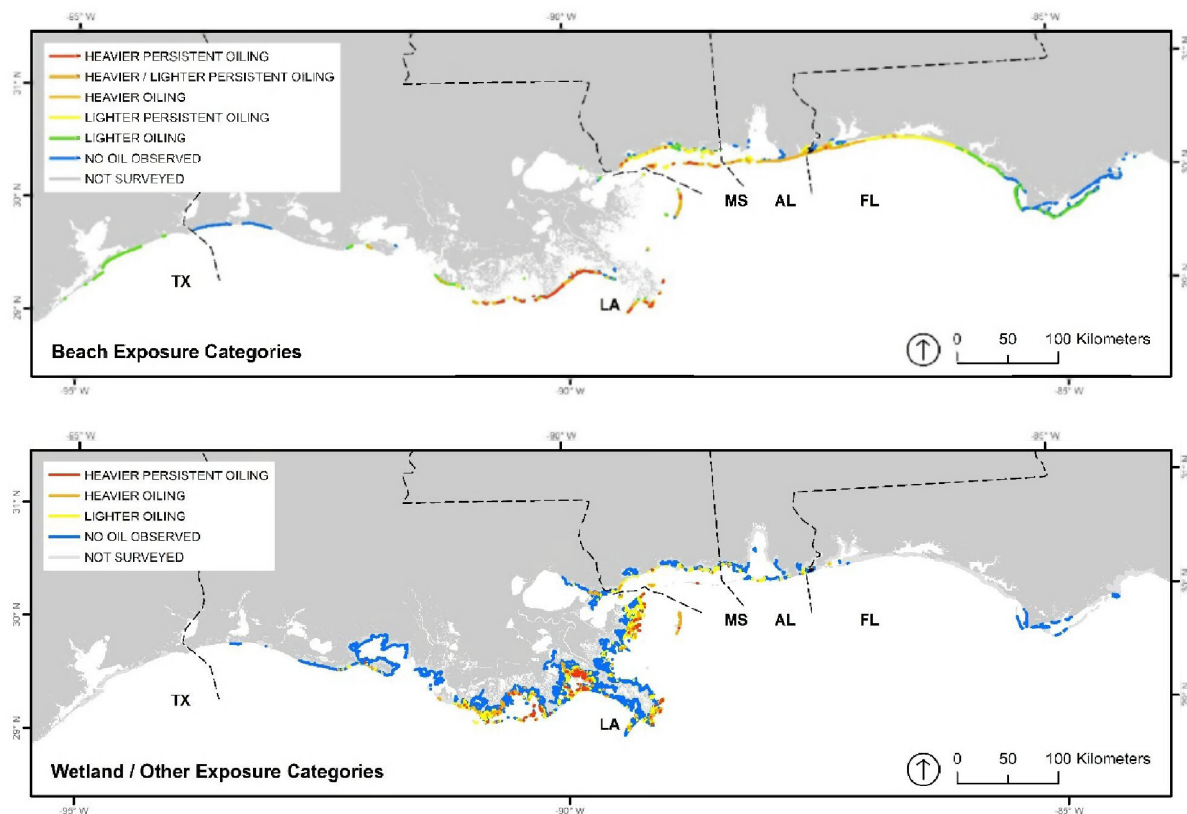


FIGURE 2. Maps of shorelines classified by final oil exposure categories for beaches (top), and coastal wetland and other shoreline habitats (bottom).

TABLE 2. Kilometers of shoreline oiling by oil exposure categories and state for beaches, and coastal wetland habitats. Note that kilometers have been rounded to nearest whole digit and may not total exactly. Zero indicates no shoreline was observed in given state, habitat, and exposure category. NA indicates that category was not used for that habitat.

Exposure Category		NO OIL OBSERVED	LIGHTER OILING	LIGHTER PERSISTENT OILING	HEAVIER OILING	HEAVIER / LIGHTER PERSISTENT OILING	HEAVIER PERSISTENT OILING	TOTAL OILED
FLORIDA	Beaches	380	101	123	0	60	1	284
	Wetlands	235	0	NA	0	NA	0	0
	Other	26	2	NA	0	NA	0	2
ALABAMA	Beaches	29	6	60	1	69	1	136
	Wetlands	100	7	NA	0	NA	0	7
	Other	76	9	NA	1	NA	0	10
MISSISSIPPI	Beaches	33	22	116	1	39	18	195
	Wetlands	163	41	NA	3	NA	0	44
	Other	27	15	NA	0	NA	0	15
LOUISIANA	Beaches	118	63	39	15	90	86	293
	Wetlands	6,178	707	NA	276	NA	72	1,055
	Other	68	10	NA	4	NA	2	16
TEXAS	Beaches	0	57	0	0	0	0	57
	Wetlands	0	0	NA	0	NA	0	0
	Other	0	0	NA	0	NA	0	0
TOTALS	Beaches	560	248	337	16	258	105	965
	Wetlands	6,675	754	NA	278	NA	73	1,105
	Other	197	36	NA	5	NA	2	43

TABLE 3. Lengths of shoreline oiling for coastal wetland habitat types by state and oiling category.

ALABAMA		Mainland Salt/Brackish Marsh		Back barrier Salt/Brackish Marsh		Delta/Inland Fresh/Intermediate Marsh		Mangrove/Marsh Complex	
Wetland Exposure Class		Length (mi)	Length (km)	Length (mi)	Length (km)	Length (mi)	Length (km)	Length (mi)	Length (km)
LIGHTER OILING		4	7	0	0	0	0	0	0
HEAVIER OILING		0	0	0	0	0	0	0	0
HEAVIER PERSISTENT OILING		0	0	0	0	0	0	0	0
		4	7	0	0	0	0	0	0
MISSISSIPPI		Mainland Salt/Brackish Marsh		Back barrier Salt/Brackish Marsh		Delta/Inland Fresh/Intermediate Marsh		Mangrove/Marsh Complex	
Wetland Exposure Class		Length (mi)	Length (km)	Length (mi)	Length (km)	Length (mi)	Length (km)	Length (mi)	Length (km)
LIGHTER OILING		18	29	8	12	0	0	0	0
HEAVIER OILING		0	0	2	3	0	0	0	0
HEAVIER PERSISTENT OILING		0	0	0	0	0	0	0	0
		18	29	9	15	0	0	0	0
LOUISIANA		Mainland Salt/Brackish Marsh		Back barrier Salt/Brackish Marsh		Delta/Inland Fresh/Intermediate Marsh		Mangrove/Marsh Complex	
Wetland Exposure Class		Length (mi)	Length (km)	Length (mi)	Length (km)	Length (mi)	Length (km)	Length (mi)	Length (km)
LIGHTER OILING		355	571	7	11	50	80	28	45
HEAVIER OILING		116	187	11	18	36	58	8	13
HEAVIER PERSISTENT OILING		39	62	0	0	3	5	3	5
		509	820	18	29	89	143	39	63